

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (original) A method for allocating bandwidth in a network appliance where the network appliance includes a plurality of guaranteed bandwidth buckets used to evaluate when to pass traffic through the network appliance, the method comprising:

Providing a shared bandwidth bucket associated with a plurality of the guaranteed bandwidth buckets;

Allocating bandwidth to the shared bandwidth bucket based on the underutilization of bandwidth in the plurality of guaranteed bandwidth buckets; and

Sharing excess bandwidth developed from the underutilization of the guaranteed bandwidth allocated to the individual guaranteed bandwidth buckets including borrowing bandwidth from the shared bandwidth bucket by a respective guaranteed bandwidth bucket to allow traffic to pass immediately through the network appliance.

2. (original) The method of claim 1 wherein the shared bandwidth bucket is a token bucket.

3. (original) The method of claim 1 wherein the guaranteed bandwidth buckets are token buckets.

4. (original) The method of claim 1 wherein the guaranteed bandwidth buckets are

credit/debit buckets.

5. (original) The method of claim 1 wherein each guaranteed bandwidth bucket is associated with a traffic shaping policy.

6. (original) The method of claim 1 wherein a plurality of guaranteed bandwidth buckets are associated with a single traffic shaping policy.

7. (original) The method of claim 5 wherein the traffic shaping policy screens based on IP address.

8. (original) The method of claim 7 wherein the traffic shaping policy screens based on the source IP address.

9. (original) The method of claim 7 wherein the traffic shaping policy screens based on the destination IP address.

10. (original) The method of claim 7 wherein the traffic shaping policy screens based on the protocol type.

11. (original) The method of claim 7 wherein the traffic shaping policy screens based on the UPD/TCP port number.

12. (original) The method of claim 7 wherein the traffic shaping policy screens based on the type of service requested.

13. (original) The method of claim 7 wherein the traffic shaping policy screens based on the traffic content.

14. (original) A method for allocating bandwidth in a network appliance comprising:
Defining a guaranteed bandwidth allocation for a first policy for passing traffic through the network appliance including using a first bucket to allocate the guaranteed bandwidth;

Defining a guaranteed bandwidth allocation for a second policy for passing traffic through the network appliance including using a second bucket to allocate the guaranteed bandwidth;

Sharing excess bandwidth developed from the underutilization of the guaranteed bandwidth allocated to the first and second buckets including

Providing a shared bandwidth bucket associated with first and second buckets; and

Borrowing bandwidth from the shared bandwidth bucket by one of the first and second buckets when the respective bucket has insufficient bandwidth to allow traffic to pass immediately through the network appliance.

15. (original) An apparatus for allocating bandwidth in a network appliance where the network appliance includes a plurality of guaranteed bandwidth buckets used to evaluate

when to pass traffic through the network appliance, the apparatus comprising:

a shared bandwidth bucket associated with a plurality of the guaranteed bandwidth buckets;

means for allocating bandwidth to the shared bandwidth bucket based on the underutilization of bandwidth in the plurality of guaranteed bandwidth buckets; and

a scheduler operable to

evaluate a packet to determine if a traffic shaping policy should be applied to a given packet,

evaluate a guaranteed bandwidth bucket associated with an identified traffic shaping policy,

determine when the guaranteed bandwidth bucket associated with an identified traffic shaping policy has insufficient capacity to support a transfer of the packet through the network, and

borrow bandwidth from the shared bandwidth bucket by a respective guaranteed bandwidth bucket to allow traffic to pass immediately through the network appliance.

16. (new) A network device comprising:

a first bucket configured to store tokens;

a second bucket configured to store tokens; and

a scheduler configured to:

determine if a size of traffic received at the network device exceeds a number of tokens stored in the first bucket, and

transfer, when the size of the traffic exceeds the number of tokens stored in the first bucket, an appropriate number of tokens from the second bucket to the first bucket so that the first bucket includes a number of tokens that equals or exceeds the size of the traffic.

17. (new) The network device of claim 16 wherein the scheduler is further configured to:

cause the traffic to be forwarded after the transfer.

18. (new) The network device of claim 16 wherein the scheduler is further configured to:

determine if the second bucket includes the appropriate number of tokens, and prohibit the traffic from being forwarded when the second bucket includes less than the appropriate number of tokens.

19. (new) The network device of claim 16 further comprising:
one or more input ports configured to receive traffic from a network, each of the one or more input ports including the first bucket, the second bucket, and the scheduler.

20. (new) A method comprising:
receiving traffic;
determining if a policy is to be applied to the traffic;
determining, when a policy is to be applied to the traffic, if a size of the traffic

exceeds a number of tokens in a first bucket, the first bucket being associated with the policy;

determining, when the size of the traffic exceeds the number of tokens in the first bucket, if a second bucket includes an appropriate number of tokens that, when added to the number of tokens in the first bucket, would equal or exceed the size of the traffic;

transferring the appropriate number of tokens from the second bucket to the first bucket when the second bucket includes the appropriate number of tokens; and

forwarding the traffic after the transferring.

21. (new) The method of claim 20 further comprising:

forwarding the traffic when the size of the traffic does not exceed the number of tokens in the first bucket.

22. (new) The method of claim 20 further comprising:

repeating the determining if a size of the traffic exceeds a number of tokens in a first bucket; the determining, when the size of the traffic exceeds the number of tokens in the first bucket, if a second bucket includes an appropriate number of tokens that, when added to the number of tokens in the first bucket, would equal or exceed the size of the traffic; and the transferring the appropriate number of tokens from the second bucket to the first bucket when the second bucket includes the appropriate number of tokens for at least a second policy prior to transferring the traffic, the second policy being associated with a different first bucket.